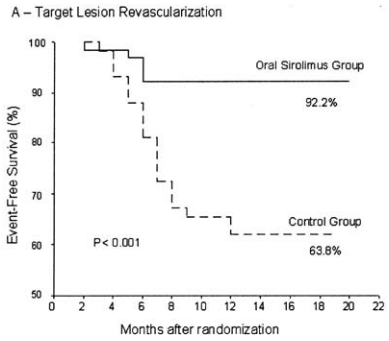
Inside This Issue of JACC

April 18, 2006, Volume 47, No. 8



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Clinical Trial

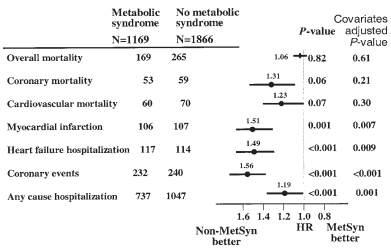
Oral Rapamycin Reduces In-Stent Restenosis

Although drugs eluted from stents reduce in-stent restenosis (ISR), an oral agent would allow use of the optimal stent without regard to the attached drug, and therapy could be tailored to the patient's chance of ISR. The Oral Rapamycin in Argentina (ORAR II) study randomized 100 patients with de novo lesions being treated with bare-metal stents to either two weeks of oral rapamycin or no therapy. Follow-up angiography at nine months showed that rapamycin reduced the binary ISR rate by 65%. The drug was fairly well tolerated, with 26% of subjects reporting a probable side effect, but only 4% stopping therapy early. This study shows that short term systemic rapamycin can reduce ISR. **See page 1522. See figure.**

Coronary Artery Disease

Meta-Analysis Shows That ACEIs Modestly Reduce CV Risk

Angiotensin-converting enzyme inhibitors (ACEIs) affect multiple metabolic pathways that theoretically should reduce atherosclerotic events, yet the clinical trial evidence of this benefit has been conflicting. Al-Mallah and colleagues performed a systematic meta-analysis of the benefits of ACEIs in patients with either documented coronary artery disease (CAD) or at high risk for CAD but no history of systolic dysfunction. This analysis, which incorporates over 30,000 subjects and five different ACEIs, shows a consistent, albeit modest, reduction in cardiovascular end points. Although the relative risks were reduced by 10% to 20%, the absolute risk reductions were small. The authors calculate that 100 patients would have to be treated for more than four years with an ACEI in order to prevent one death. **See page 1576.**



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Hyperlipidemia and Metabolic Syndrome

Metabolic Syndrome Increases Cardiac Risk in the Elderly

The metabolic syndrome (MetSyn) is defined as three of the following five criteria: increased waist circumference, triglycerides >150 mg/dl, low high-density lipoprotein cholesterol, elevated blood pressure, and fasting glucose >110 mg/dl. Although this syndrome is known to be associated with increased cardiovascular risk in the general population, it is not clear if it imposes the same risk in elderly populations (>70 years). Butler and colleagues studied the impact of the MetSyn on the more than 3,000 elderly subjects enrolled in the Health ABC Study. Both myocardial infarction and hospitalizations for heart failure were significantly more common in subjects who met the criteria for the MetSyn with a hazard ratio of 1.5. This study confirms that the MetSyn is associated with increased cardiovascular risk, even in subjects over 70 years of age. **See page 1595. See figure.**

Heart Failure

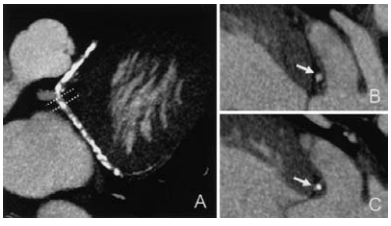
The Quality Factor: A New End Point for Clinical Trials

Many clinical trials in cardiology are derided for their lack of "hard" clinical outcomes. These events, such as confirmed myocardial infarction or death, are sometimes preferred because they are neither subjective nor the result of referral bias. Although this is laudable, patients may not always prefer a treatment that results in fewer deaths if it is associated with poor quality of life. In a substudy of the COMET study, Cleland and colleagues calculated a "patient journey" score consisting of days alive, out of hospital, and feeling well. Despite treatment with beta-blockers, death and poor well being remained prominent and were of greater magnitude than hospitalization. In an editorial related to a substudy from the COMET study, Stevenson and Lewis describe why it may be important to ask study participants how they feel, rather than just counting the hard end points at the end of the trial. **See pages 1603 and 1612.**

Cardiac Imaging

Validation of a Cardiac MRI Protocol for Detection of CAD

Cardiovascular magnetic resonance (CMR) has shown promise as a method for detecting significant coronary atherosclerosis, but its adoption has been hindered by both time-intensive interpretation protocols and a lack of standardization. Klem and colleagues studied subjects with a moderate pretest probability for coronary artery disease (CAD) who were referred for angiography. Before angiography, the subjects underwent a comprehensive CMR study, including cine-CMR to assess wall motion, rest and adenosine vasodilator perfusion images, and finally delayed-enhancement imaging that visualizes areas of prior infarction. The scans were interpreted with a visual grading score using 17-segment cardiac models, except the apex was excluded. The combined protocol had sensitivity, specificity, and accuracy each over 85%. This CMR protocol shows great promise for the detection of significant CAD and highlights how the different modalities of CMR can be complementary to each other. **See page 1630.**



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Cardiac Imaging

Multidetector CT Angiography for Plaque Morphology

Although intravascular ultrasound (IVUS) can stratify atherosclerotic lesions as stable or potentially unstable, it requires invasive angiography limiting its widespread use. Multidetector computed tomography (MDCT) may be able to not only quantify stenosis, but also to delineate the composition of the obstruction and the presence of coronary remodeling. Hoffman and colleagues performed MDCT in 37 patients with varying presentations of coronary atherosclerosis and correlated these findings with coronary angiography. For approximately two-thirds of the lesions, they were able to quantify the percent stenosis, the plaque area, and the area of the external elastic membrane in a manner analogous to IVUS. They were also able to calculate the percentage of the plaque that was calcified and, with some overlap, segregate lesions into stable versus unstable. As the resolution of MDCT improves, so will the ability to characterize lesions as stable or potentially unstable. **See page 1655. See figure.**